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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,760	07/19/2001	Frederic Joel Harris	TEU-015	2514

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EXAMINER

NATNAEL, PAULOS M

ART UNIT PAPER NUMBER

2614

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,760

Applicant(s)

HARRIS ET AL.

Examiner

Paulos M. Natnael

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17-20, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 16, 21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **1-15,17-20,23-24** are again rejected under 35 U.S.C. 103(a) as being unpatentable over **Wu** et al. U.S. Pat. No. 6788,349.

Considering claim 1, Wu discloses a method and system for broadcasting a digital data signal within an analog TV signal using orthogonal frequency division multiplexing. See title Wu teaches on figure 10 a data source outputting data bits and OFDM symbol outputted from the IFFT circuit. The OFDM symbol is then combined with an NTSC signal and transmitted through the RF upconverter.

Wu does not specifically disclose extracting sync signal from the composite NTSC signal. However, some sort of a synchronizing or a control signal would have to be used in order to synchronize the OFDM modulated symbols output from the IFFT with the NTSC signal. That is to say, the method of separating synchronization signals or extracting sync signals from the composite video signal in order to utilize the same to synchronize the transmission of the combined output signal is well known in the art of television signal broadcasting. Therefore it would have obvious to those with ordinary

Art Unit: 2614

skill in the art to modify the system of Wu by providing a sync signal in order for the receiver of the signal to be able to receive and decode the signal properly.

Regarding claims **2,9,17**, the claimed translating the analog signal to be centered at an intermediate frequency above the baseband of the composite video signal, and amplifying the translated analog signal, is implied because it is a well known feature in the art, i.e., the original analog signal is up-converted in a mixer circuitry or down-converted (receiver side) to be in a desired IF frequency, and amplified as needed.

As to claims 3 and 4, see rejection of claim 2;

Considering claim **5**, the method of Claim 1, wherein modulating further comprises: encoding the binary bit stream with forward error correction code; and precoding the generated in-phase and quadrature symbol streams according to comb filtering effects, is met by multilevel encoder, Fig.10;

Considering claim **6**, the method of Claim 5, wherein precoding comprises: the assembly of in-phase and quadrature symbol frames according to OFDM modulation techniques, is met by multilevel encoder as well.

Considering claim **7**, the method of Claim 1, wherein the composite video signal is a NTSC video signal, is met by NTSC signal, fig.10;

Considering claim 8, regarding claim 8, see rejection of claim 1;

Regarding claims 10 and 11, see rejection of claim 9;

Considering claim 12, see rejection of claim 5;

Considering claim 13, see rejection of claim 6;

Considering claim 14, the apparatus of Claim 8, wherein the composite video signal is a NTSC video signal, is met by NTSC signal, fig.10;

Considering claim 15, See rejection of claim 1.

Considering claim 18, see rejection of claim 5;

Considering claim 19, the method of Claim 15, wherein the composite video signal is a NTSC video signal, is met by NTSC signal, fig.10;

Considering claim 20, Wu discloses a receiver circuit comprising a tuner which outputs the OFDM symbol to a filter which in turn outputs data carriers to the FFT, a multilevel decoder and data sink, as well as separate decoding path for the video and Audio signals as illustrated in fig.10;

Considering claim 23, the receiver of Claim 20, further comprising:

a decoder configured to decode the single binary data stream according to forward error correction coding included in the binary data stream, is implied because, on the receiver side, is met by multilevel decoder, fig.10;

Considering claim **24**, the receiver of Claim 20, wherein the composite video signal is a NTSC video signal, is met by NTSC signal, fig.10;

Response to Arguments

3. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

4. Claims **16, 21, and 22** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to disclose, wherein splitting comprises, suppressing the composite video signal for attaining the offset OFDM modulated data stream; suppressing the offset OFDM modulated data stream for attaining the composite video signal; and extracting the synch pulses from the attained composite video signal, as in claim **16**;

wherein the splitter comprises, a first signal suppressor configured to suppress the composite video signal for attaining the I-Q OFDM modulated data stream; a second

Art Unit: 2614

signal suppressor configured to suppress the I-Q OFDM modulated data stream for attaining the composite video signal; and an extractor configured to extract the synch pulses from the attained composite video signal, as in claim 21;

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

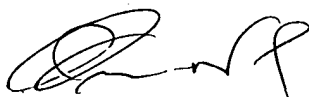
Saeki, U.S. Pat. No. 5,956,318 discloses an orthogonal frequency division multiplexing system comprising an OFDM modulator (Figs. 4A and 4B) that includes a quadrature two-phase-modulator 26 for quadrature two-phasing-modulating analog input data bitstream, an adder 28 for adding a sync signal to the quadrature two-phasing-modulated signal, a mixer 30 for mixing a reference signal and the quadrature two-phasing-modulating signal to produce a carrier signal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (571) 272-7354. The examiner can normally be reached on 10:00am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571)272-7353. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2614

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



PAUL M. NATNAEL
PATENT EXAMINER

PMN
April 8, 2005